The MAC Flyer

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MILITARY AIRLIFT COMMAND

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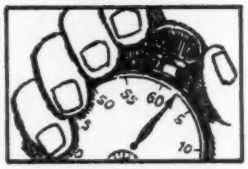

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Yes, the End Is Near—

But if you hustle you will still be able to make it *before* the end. The last stroke of midnight on 31 March 1980, will toll the termination of this year's MAC Flying Safety Writing Contest. Everyone whose entry qualifies for judging will receive a colorful C.R. Terror "Fly Safe" T-shirt and a free one-year subscription to *The MAC Flyer*. If your entry is one of the Honorable Mention winners, you'll receive a handsome wall plaque suitably engraved to immediately identify you as an up and coming author. The top three winners are presented classy desk sets.

This is a golden opportunity to boost your ego and at the same time contribute something to safer flight operations. Here are the rules:

- Entries can be be based on fact, fiction, or fantasy, and expressed in prose or poetry, with either a technical, philosophical of even humorous bent.
- Manuscripts should be double-space typed and submitted in two copies. Identify your entry by title only and attach a cover sheet with your name, address, unit, T-shirt size and a short biographical sketch we can use to make up the "About the Author" blurb when your journalistic gem is published.
- Length should be between 1,000 and 3,000 words which works out to between 6 and 14 double-space typed pages. Poetry may be shorter.

Entries must be postmarked no later than 31 March 1980, so don't let this opportunity pass you by. Rush your entry to:

Writing Contest
HQ MAC/IGFE
Scott AFB, IL 62225

Satan's Safety

The price of this commander's unorthodox safety program turns out to be more than he bargained for.

by Maj. Grover C. Tate, Jr.
USAF (Ret)

Flying safety programs as we know them today are relatively new. Until recently, much of the advice offered by safety officers was accepted reluctantly, or only when it was convenient to do so. Today strong safety programs are recognized as essential and given solid backing at the highest levels. The following is a fictional account of how one beleaguered commander disregarded the advice of his staff experts and set out to improve his unit's sagging safety statistics in his own unique way.

For veteran aviators who served in the days when flying was in its fledgling stage, this imaginative account may not sound as far-fetched as it will to those who have been schooled in safety principles from the day of their very first flight.—Ed.

The hour was very late, but in one room of wing headquarters the lights burned brightly. In that room one man, badly in need of sleep, stared blankly at the graphs spread on the scarred conference table before him. A single star gleamed from each shoulder of the blouse hanging on a coat rack; an impressive array of ribbons topped by command pilot's wings adorned the left breast.

At this moment the man was facing what seemed to be an insurmountable problem: trying to devise a way to stop the soaring accident rate in the wing which he commanded. War activities had overloaded his airlift capabilities and in almost direct proportion, the accident rate had increased. At a time when his aircraft were most needed, many were out of commission because of accidents.

Fatigue was overtaking the general and his emotions were beginning to win the battle with reason. There's got to be an easier way, he thought wearily. His mind returned again to the long and fruitless conference with his operations and safety staff.

"Yes, Sir, we can do it," the safety officer had said. "But you can't build a safety program from scratch overnight. It's going to take a lot of work, a lot of patience, and a lot of time."

Time we don't have, the general thought. Men in combat areas are depending on us to deliver the supplies they need, and we fail them because some idiot taxis his airplane into another one, or installs a part backwards, or won't use his checklist. We need results now—not next week, not next year.

He pushed the graphs away and leaned back in his chair. Clasping his hands behind his head, he closed his eyes. For a moment he dreamed of an absolutely mishap-free operation—months and months of flying with no aircraft down for accident repair, no aircraft or crewmembers lost. He could saturate the troops with supplies. If only there were an easy way . . .

"I believe I can help you, General."

The general leaped to his feet, startled and instantly fully awake.

"Who said that?" he demanded.

"You can't see me, and wouldn't want to if you could," the voice answered.

"I'm in no mood for games," the general countered. "Come out where I can see you."

"No, I can't do that. But I can offer you the easy solution

you're looking for. It will, of course, require certain concessions on your part."

The general, tired and somewhat shaken, decided to go along with the shadowy, cloak-and-dagger game. "What's your proposition, and who the devil are you?" he asked.

The voice chuckled. "Be careful, General. You wouldn't want to take my name in vain."

"You are the *Devil?*" the general asked.

"The very same," replied the voice. "Or, if you prefer, Lucifer or Satan will do as well."

"You I don't need. I have problems enough without having you on my back," the general insisted. "Not only that, but I remember the lousy deal you gave Daniel Webster's client."

"As they say, General, 'You have to expect some losses.' But you also have to work with the best that's available; and at the moment, I'm in a position to guarantee you two years of accident-free operation. Two years of absolutely no mishaps, two years to develop your own accident prevention program. I'll give you an ironclad guarantee, and we can start right now."

"And in exchange?" the general asked.

"The usual terms," the devil replied smoothly. "As things are now, it's rather a tossup as to who gets your soul, and I suspect the odds are a bit in my favor. This way I get a sure thing, and you get what now seems impossible—no accidents for two years. You may even pick up another star or two. So you see, General, there is an easy way."

The general withdrew into deep thought. He hadn't led a bad life, but there were a few things here and there that might make him a candidate for the lower regions, so would he really be gambling? Besides, the whole situation was probably his imagination; he'd laugh at himself in the morning.

But then again, suppose it were real? No accidents for two years . . . .

Partly in jest, partly in desperation, he announced his decision. "I'll accept your offer."

"Done!" thundered the voice in triumph, its echo slowly fading until all was quiet.

As the general sat at his desk the next morning, he was unable to shake the nagging feeling that the events of the night before had not been simply a product of fatigue and imagination. He was turning the memory over and over in his mind, trying to separate fact from illusion, when his secretary called. "Sir, Colonel Ellis is on the phone. He says it's urgent that he speak with you immediately."

A strange chill seemed to come over the room. "Put him on," the general groweled apprehensively.

"Sir, we have problems." The colonel took a deep breath and went on, "We haven't been able to get a single bird off the ground today, and it's the same with our airplanes and crews out in the system. As nearly as we can tell none of our aircraft are airborne or capable of launch anywhere in the world. It's unbelievable, like a weird TV movie, but it's the truth. New engines are failing to start, inspections are turning up premature cracks, tanks won't hold fuel, flight crews are calling in sick, replacement parts are virtually nonexistent, and no one is flying. We can't get a single aircraft in operation." The colonel paused to catch his breath.

The general paled and slumped in his chair. Hesitantly he asked, "Have any of the aborts or cancellations been caused by accidents of any sort?"

"No, Sir, not to my knowledge," the colonel replied.

"I thought not," the general stated with sickening certainty. "Let me know if anything changes, Tom. I'll get back to you later." He replaced the receiver with a trembling hand.

So this is it, he thought grimly—the real beginning of the nightmare. Two years of no accidents, the Devil had said. Nothing was mentioned about flying, nothing of safe *flight* operations. He'd been had. This was what he had received in exchange for his soul. This was his "easy solution." This was the product of unsound thinking, of fatigue, of desperation, of shallow ambition and of panic. And if this was the good part of the bargain, what would the other half be like? The general shuddered.

But it couldn't be real, he thought desperately. These things only happen in stories, not in real life. "This can't be real!" he protested.

It was then that he noticed the large hole burned into the carpet near his desk.

Reprinted from the June 1977 issue of *TMF*.

Two Seconds Too Far

How far can an instructor pilot allow a student to go before it's too late?

With the navigators' events completed, the pilots looked forward to their part of the training mission. In the left seat an experienced copilot, who was in the AC-upgrade program, flew the four-engine transport under the watchful eye of a young IP in the right seat. After an initial tacan approach, they did a series of various other instrument approaches to touch-and-go landings, plus one practice missed approach.

After the fourth touch and go, they entered the VFR traffic pattern. On downwind the IP briefed a normal four-engine approach to a touch-and-go, followed by a simulated engine failure on takeoff after refusal speed, so the takeoff would have to be continued on three engines (this was for them an authorized maneuver). The left-seater flew a good approach, but misjudged the flare and bounced the transport onto the runway. The airplane continued straight ahead in a three-point attitude while the IP reset the flaps and trim for takeoff, then the student advanced all four throttles to takeoff EPR.

With over 6,000 feet of runway remaining, the IP initiated the simulated emergency by retarding number-one throttle to idle. At that moment, the student pulled back on the yoke enough to bring the nosewheel off the runway, and simultaneously applied full *left* rudder. Within one second the transport began to react to the incorrect rudder input and started an ever-increasing yaw and sideslip. At this point the IP had just over two seconds to react and accomplish rudder reversal before the vertical fin stalled. Otherwise, recovery would be virtually impossible because the yawing moment could not be reversed.

Unfortunately, the improper rudder input wasn't corrected. In about three seconds the yaw angle increased significantly and the fin stalled as the left main gear rolled off the edge of the runway. Next the number-one engine and left wingtip struck the ground and the airplane continued pivoting to about 90 degrees from runway heading before veering completely off the concrete. About six seconds after the left rudder was pushed, the nose section of the airplane struck the ground and the aircraft began to break up. Crewmembers in the front of the airplane were killed; two in the aft section survived.

The mishap was admittedly tragic, and the lessons to be learned stem from one basic question: "Could you, as the instructor, have prevented the the accident?" Why the IP *didn't* react in time is important, but cannot be precisely determined. Many things can influence an instructor's judgment in any situation, but two of the most important—and most clearly implicated in this mishap—are maneuver awareness and willingness to take control of the aircraft.

Maneuver awareness involves being completely proficient and familiar with each flight pattern that you are expected to teach. This means more than just being able to fly well, or repeat the appropriate words from the book. You must understand the aerodynamic implications of what's going on with the aircraft and what will happen if incorrect control inputs are made. In most cases,

students have a lot of latitude before they come close to pushing the airplane beyond its limits. As an instructor, you must set your performance parameters so they are more restrictive than the aerodynamic limits of the airplane. You have to know which mission segments have the most risks, and then try to limit the possibility of a mishap by tightening up your standards.

A second part of maneuver awareness is predicting where or when the student is most likely to make a mistake. Sometimes this is only learned from experience, but there are other ways. Most experienced instructors could easily compile a list of common student errors for everything from filling out the DD-175 to setting the parking brake, and are willing to share the information. Another important source of student-error info is the simulator. First, the kinds of errors trainees make in the simulator will likely be the same ones made in the cockpit, so a check of the student's training folder can yield important information. Second, some maneuvers translate poorly into simulator programs, especially flight profiles that require visual cues for primary aircraft control. If the simulator doesn't have a visual capability, you'll probably find students looking inside at a heading indicator during a simulated engine failure instead of outside at the world's largest heading and attitude reference. Most errors can be overcome if the IP recognizes the problem in time and takes charge of the situation.

One of the hardest decisions to make, whether you are an IP or an AC letting the copilot get a landing, is when to take control of the airplane. Accident files include numerous mishaps where IPs have allowed students to go *too far*. Many IPs believe that the less they yank and ride the controls when the student is flying the better. To some extent this is true, but the principle needs specific application. When it becomes a general rule, the instructor can become a slave to the idea and may hesitate too long to take over in a tight situation.

Sometimes this hesitancy to say, "I've got the aircraft," stems from pilot training flights when the IP was a student with an instructor who constantly usurped the controls and never quit talking. Such IPs are avoided like the plague, but few pilots get through flight training without running into at least one. Later in life, these pilots become IPs themselves, and carry out their resolve "never to be like that instructor I had back in pilot training."

At the risk of overstating the obvious, it's necessary to say that *whenever* the IP doubts the safety of a particular phase of flight, he must take control of the aircraft. Self-evident as this rule seems, mishap reports indicate that some IPs still don't believe it. Often the instructor's judgment is influenced by the trainee's rank or experience (What *do* you say to a guy with 10,000 hours?), and he may rely too much on the students to figure things out for themselves.

There also seems to be a sort of hypnotic effect on the instructor as he watches another pilot do maneuvers competently—a feeling of being detached from the actual situation. This is also known as the "halo effect." It's the tendency of instructors to generalize good student accomplishments to all of a student's prospective performance. In this case the instructor isn't prepared for the trainee to make a mistake. When the student does err, the IP is forced to make a snap decision and may improperly elect to let the student figure his own way out. This is reminiscent of expecting the student to add a little power in the flare to cushion a high sink rate just because "ol' Stanley always makes good landings." Odds are good that Stanley *won't* add power.

One of the hardest decisions to make is when to take control of the airplane.

The real trick is to be able to anticipate rough situations just moments before they happen and take over. Of course, to do this properly, you must recognize your own limitations. It may hurt the student's pride a bit to have an aircraft taken away from him, but hurt feelings are better than some of the alternatives. Admittedly there is no better way for a student to learn than to get fouled up and then get himself unfouled through his own efforts. Wrecking an airplane, however, isn't in this category.

SOUTH FOR THE WINTER

by Capt James P. Coe
Associate Editor

View toward Grid West from a C-141 cockpit, approaching Victoria Land over the sea ice.

Each Austrus summer thousands of scientists, students, Navy and Coast Guard sailors, and supporting personnel head for the continent at the bottom of the world, Antarctica. They follow the proud legacy of heroic explorers who first sought to uncover the secrets of the South Pole in the late 18th Century.

Exploration of the other continents was nearly complete by the beginning of the 20th Century, so interest in Antarctica as the last real frontier grew. In 1911 Roald Amundsen of Norway was the first person to reach the South Pole. During that same season, another renowned explorer, Robert F. Scott, an Englishman, also set out for the Pole. He arrived there only to find the Norwegian flag and two letters, one addressed to the King of Norway and the other to Scott himself. Somewhat disheartened, the Briton and his four fellow scientist-explorers started back toward their base camp near what is now McMurdo Station. Unfortunately, they ran out of food, fuel and physical energy, and all perished in an early fall blizzard. These five courageous men, however, began the earnest scientific investigation of Antarctica.

After World War I, interest in polar exploration revived and on 29 November 1929, Admiral Richard E. Byrd (USN) was the first to fly an airplane to the South Pole and back.

In the ensuing 50 years, aircraft and dependable tracked vehicles made Antarctic exploration easier, but no less challenging. During the summer of 1956-57 the first Douglas C-124s were used to move people and cargo to the ice-covered continent. The 63d Troop Carrier Wing (TAC), Donaldson AFB, SC, operated that gaggle of Globemasters to Antarctica in support of U. S. participation in the International Geophysical Year. (The 63 TCW became part of MATS in 1957.) Airlift to the Antarctic continued and in November 1962 the Lockheed C-130 made its debut on the ice. The first Herk flown to Antarctica was manned by a crew from the 1608th Air Transport Wing (Heavy), Charleston AFB, SC.

The first C-141 to land on the ice (October 1965) was from the 1501st Air Transport Wing, Travis AFB, Cal. However, Starlifters didn't participate regularly in Deep Freeze until ten years ago (1969-70 season), when MAC brought the jet age to Antarctica in force. This year crews and aircraft from the 60 MAW, Travis AFB, flew ice shuttle missions from Christchurch, New Zealand, in support of National Science Foundation projects.

Passengers boarding at Pago Pago on their way to Antarctica.

Scientist enjoys the view from cockpit as the Starlifter approaches New Zealand.

Mt. Erebus, site of the 1979 crash of a commercial DC-10, is 30 miles from McMurdo Station.

Although no mission into such a hostile environment can be termed routine, this is the story of a typical ice mission. Come ride along. The flight departs Travis in the early morning hours for Point Mugu NAS, Oxnard, Ca., where supplies and passengers bound for the ice are onloaded. Usually just after lunch time, the 141 lifts off the Navy's "duty" runway and heads westward across the Pacific for Hickam AFB, Hawaii.

Characteristically, this leg of the mission is not flown by crews going to the ice. At Hickam the crew will enter the Pacific staging operation and may pick up a mission ranging from routine resupply to disaster relief. The flight arrives at Hickam around midnight local time. The passengers are taken to the terminal while the aircraft is serviced and the crews are swapped. Having deadheaded to Hawaii the day before, the "ice crew" is alerted late in the evening for their mission to Christchurch, New Zealand, via Pago Pago, American Samoa. Because of the special requirements for taking a plane to the ice, this crew is augmented with extra pilots, navigators, and loadmasters. Except for the flight engineers, every crewmember (prior to going in by him or herself) must have made one flight to Antarctica supervised by an instructor who's been there before. To be ice qualified, pilots must have actually made a supervised landing and takeoff on the ice runway.

The flight to Pago Pago is a night leg with the navagators taking advantage of the opportunity to shoot celestial fixes. An interested passenger may visit the cockpit and watch the INS tick off tenths of degrees of latitude until it shows "00°00.0" as the flight crosses the equator. A few hours later the Starlifter descends over the lush green mountains of Tutuila Island and touches the runway just before dawn.

Within a couple of hours, the mission is ready to depart the picture-book tropical island. Shortly after departure the Starlifter crosses the international dateline and slips unceremoniously into tomorrow.

After seemingly endless hours of flight over featureless ocean, the scenery is dramatically improved by the appearance of the islands of New Zealand. Archeologists, meteorologists, ice observers, cooks and sailors take turns visiting the cockpit for a view of the scenic coastlines, forests and mountains drifting by below. Descending over a plateau between mountain ranges, the Starlifter touches down

Navy snowblower preparing the ice runway.

Refueling pit area near the ice runway, McMurdo Station.

Snow-cat transporter, McMurdo Station.

"Follow Me" firetruck leads Starlifters in.

Tractor moves cargo sled toward a C-141.

at Christchurch International about noon local time. After processing through New Zealand customs, the passengers head for their temporary quarters in Christchurch. Crewmembers are greeted by members of 61 MASW's Operating Location-Delta (OL-D) and the ALCE from Travis. Later that afternoon they are thoroughly briefed on their upcoming mission to the ice. In less than 48 hours they will begin one of the most exciting experiences of their lives.

The crew bound for Antarctica shows at OL-D about 0800 local for a 1000 departure. They are thoroughly briefed on enroute and Antarctic weather by Navy weathermen who have been in frequent contact with the station at McMurdo. From this information, the navigators compute a preflight point of safe return (PSR) which is the furthest fix along the route to McMurdo that the C-141 can fly to, turn around, and still make a safe return to Christchurch. The maintenance troops assigned to the operating location and the ALCE have put the C-141 in the best condition possible for the flight south—aircraft repairs on the ice are limited to what the crew chief and aircrew can provide. Maintenance cancellations are rare, and if the weather is good, the heavy Starlifter thunders off the runway on schedule and climbs for FL 330. Working with Auckland Oceanic Control, the crews often arrange a cruise-climb clearance that will save them additional fuel and possibly extend their PSR to a point over McMurdo.

The first couple of hours of the flight are much like any other oceanic crossing, but at about 60° South Latitude the crew starts seeing ice floes in the ocean. Also at 60 South the navigators begin using grid references because magnetic variations reach 45 degrees and keep increasing very rapidly. Also, Navy ice observers come forward to survey the frozen sea and lay out possible routes for the ice breakers which will lunge, plunge and crunch their way into the Ross Sea later in the summer.

About 200 miles out of McMurdo the flight makes "landfall" over Victoria Land. If the weather is clear, Mount Erebus (13,280 feet) may be seen on the horizon. The landscape below is a white, desolate, ice desert. About this time the flight engineer starts cooling off the airplane interior and the passengers and crew begin donning their winter clothing. When they left New Zealand, temperatures were mild, probably in the 60's, but at McMurdo the summer heat may succeed in bringing the mercury just above 32°F on a "warm" day.

About 100 miles out, the crew raises Williams Field Tower on UHF, gets their latest weather ob-

Main Street at the bottom of the world.

servation and checks the condition of the ice runway. Antarctic residents now eagerly await the arrival of the C-141. At 25 miles out, the Starlifter is picked up on PAR and the pilot flies a precision approach to one of the most unusual runways in the world.

Grid runway 08 / 26 is layed out each year by the U.S. Navy on the sea ice. The ice is tested for weight-bearing capacity and then graded to a flat surface. Loose snow is regularly blown onto the runway to provide traction for the MAC C-141s and Navy C-130s. After the ice begins to melt, the runway is eventually destroyed by ice breakers on their way into McMurdo Sound. When the weather at McMurdo is bad a pilot can find himself breaking out at minimums with only the black barrels that mark the runway providing visual cues; all else—ground and sky — is white.

The landing roll is rough and loud as the big aircraft tires kick packed snow and ice chunks against the fuselage. The Starlifters occasionally suffer minor damage from the landing, but it's usually repairable before the return trip.

Using some unusual equipment and carefully supervised safety practices, the station crew at Williams Field simultaneously off loads and refuels the C-141. Pallets are pushed onto forklifts and a ski-mounted flatbed while JP-4 is pumped from large bladders. Outbound cargo is then onloaded and departing passengers are prepared for boarding.

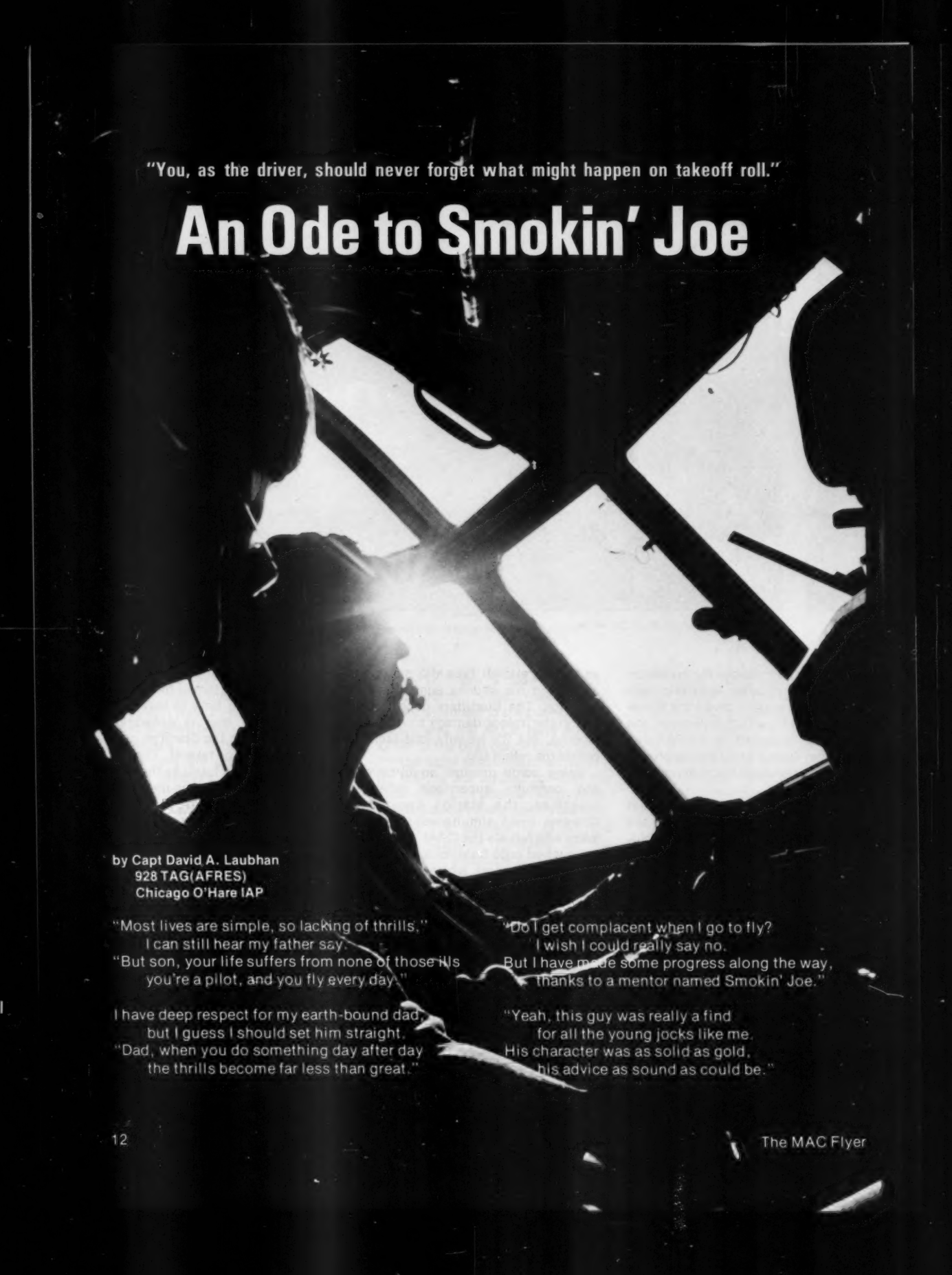
Meanwhile the crew contacts the folks at the ice tower where they get a weather briefing and check for messages from Christchurch. On their first trip to the ice aircrews are frequently treated to a guided tour of McMurdo Station. Riding in snow-cat crew busses, they make the five - mile trip to Scott's Hut and visit the unique living and working facilities at the bottom of the world.

Too soon it is time to leave the rugged beauty that is Antarctica and the AC taxis the Starlifter onto the ice runway for takeoff. The roll is again rough and loud. As the gear thumps into the wells and the C-141 climbs out smoothly the crew visibly relaxes. If all goes normally, the Starlifter touches down at Christchurch about five hours later. The crewmembers have put in one of the most demanding, but most satisfying, 14-hour crew days of their lives. They have set foot on a continent where not many people have visited, and safely accomplished one of the most challenging missions that MAC flies.

Special thanks to Major Mike Anderson, 60 MAW, and to Major Ron Harris and Captain Wayne McKinnis and their aircrews from the 86 MAS, who made it possible for the Flyer to get this story. – Ed.

"You, as the driver, should never forget what might happen on takeoff roll."

An Ode to Smokin' Joe



by Capt David A. Laubhan
928 TAG(AFRES)
Chicago O'Hare IAP

"Most lives are simple, so lacking of thrills,"
I can still hear my father say.
"But son, your life suffers from none of those ills
you're a pilot, and you fly every day."

I have deep respect for my earth-bound dad,
but I guess I should set him straight.
"Dad, when you do something day after day
the thrills become far less than great."

"Do I get complacent when I go to fly?
I wish I could really say no.
But I have made some progress along the way,
thanks to a mentor named Smokin' Joe."

"Yeah, this guy was really a find
for all the young jocks like me.
His character was as solid as gold,
his advice as sound as could be."

Honorable Mention, 1979 MAC Flying Safety Writing Contest

"I guess you could call him an old head,
that L/C with touches of gray.
In his earlier days he flew Southern's airways
and before that, played ball at Green Bay."

"Our first flight together one Monday,
was a two - hour hop to L.A.
What made me remember that sortie
is the wisdom of what Joe had to say."

"We briefed and we filed, we started and taxied,
and held for a fighter or two.
I must have looked bored when ol' Joe turned and said,
'Dave, I've a question for you!' "

"Go ahead," I said with a casual glance
as I lowered my sunglasses down.
I expected Joe's question to be a challenge,
but nothing quite this profound:

"Dave, you've got lots of time in this bird,
and you're not the first on my poll.
So tell me, quite frankly, what do you think about
during your takeoff roll?"

I sat there a moment in sort of a daze,
hoping the tower'd say go.
It's no fun being from Stan/Eval,
and having to say, "I don't know."

"Believe me, Dave," the colonel replied,
"You're not the first unaware,
Many are blind to the pitfalls and dangers
Which always are lurking out there."

"All crewmembers face their critical times
and if safety is truly our goal,
You, as the driver, should never forget
what might happen on takeoff roll."

"An engine or a tire or a runaway trim
could easily mess up your flight.
What would you do at one hundred knots
if you suddenly swerved to the right?"

"It's impossible to tell just what might go wrong,
and chances are nothing will.
But if the gremlins catch you mentally napping,
your chances of living are nil."

His lesson just hung there in silence
for what seemed like a decade or two,
When I pushed on the throttles to get under way,
the colonel had done what he meant to.

Our flight lasted only two hours
and after we'd finally blocked in,
I thought Joe might repeat his question,
but it never came up again.

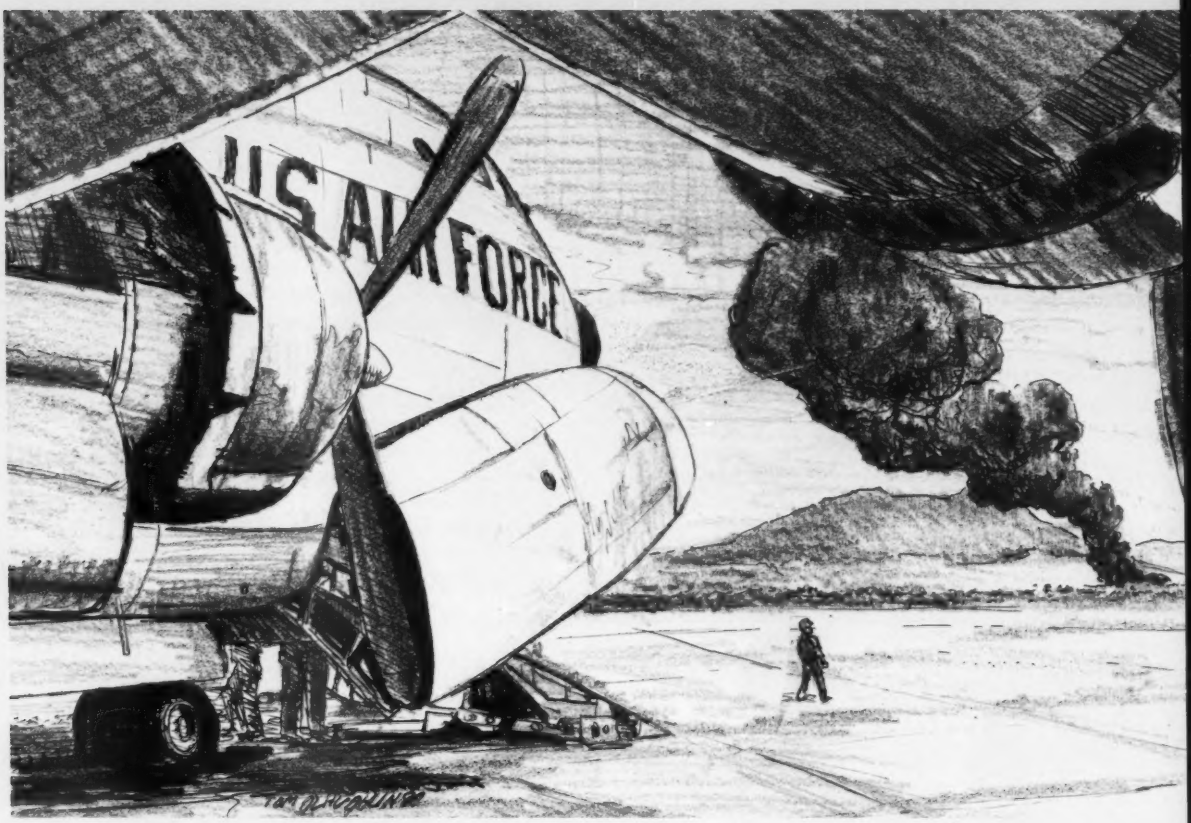
I've raised lots of tires and flown many hours
since that Monday a few years back,
And, on occasion, I catch myself slipping,
but I'm quick to take up the slack.

So now when my job calls me skyward
and the tower clears me to go,
I recheck the final, look down the runway,
and quietly thank Smokin' Joe.

ABOUT THE AUTHOR

Captain Laubhan entered the Air Force in 1969 from Honolulu, where he had been teaching school. After pilot training, he completed tours of duty as an HC-130 pilot at Pease AFB, NH and Korat RTAFB, Thailand. On returning from Southeast Asia, Capt Laubhan was assigned to the 1550th Aircrew Training and Test Wing as an HC-130 instructor pilot. He now flys C-130As with the 928 TAG at Chicago O'Hare IAP. Captain Laubhan holds a bachelors degree from Loyola University of Chicago and masters degree from the University of New Mexico. He was the firstplace winner in the 1978 writing contest. In civilian life he flys as a Second Officer with United Airlines.

Witnessing a tragic and needless accident makes a lasting impression on a young navigator and his fellow crewmembers.



Memories of a Midair

by Maj James G. Gibson II
Supervising Editor

By late March, when the weather stateside is just starting to loosen the grip of winter, temperatures in the Philippines are already as hot as what most Americans anticipate on the Fourth of July. Add in the notorious tropical humidity that prevails at 15 degrees North Latitude, and you have the boiler room atmosphere of the Clark Air Base ramp on any average spring day. Such a day in 1965 is as sharply imprinted on my mind as if it happened only yesterday, rather than almost a decade and a half ago.

I suppose I was even more impressionable than usual, because it was my first trip out in the system as a brand new second lieutenant navigator. Still a green-around-the-gills graduate from James Connally AFB at Waco, Texas, here I was at Clark, half way around the world, reeling from the shock of crossing so many time zones and thousands of miles of open ocean. I was also in a mild state of apoplexy over the discovery that

earning my wings was only a scanty preview of what navigating in the real world of Military Air Transport Service would be like. At any rate, while we pounded the ramp, awaiting the arrival of an overdue fuel truck to top off our thirsty C-124, I joined the rest of the crew under the wing of our big Globemaster. In its shade, the temperature was mild enough so that we only felt like we were on the fringes of hell, rather than right in the middle of it helping to stoke the boilers, as was the case inside the aluminum oven or out in the direct sun. Long after the rest of us had assumed relaxed postures beneath our four-engine behemoth, however, the intrepid copilot insisted on walking around out in the open where he could observe the unusual variety of airplanes buzzing around in the Clark traffic pattern.

Being both extremely hot and bone weary, I was just slipping into the inviting arms of Morpheus when the copilot sounded an alarm calculated and modulated to arouse the dead. "My god, look at those airplanes!" he screamed.

I don't think a lightning bolt striking next to me could have opened my eyes any quicker or brought my attention to bear any faster on the awesome tableau that was already unfolding in the instant it took my eyes to focus. Two large fireballs hung nearly motionless in the sky as if they were suspended on invisible wires. Behind them loomed the distinctive saddleback profile of Mount Arayat. Everything seemed to slip into a dreamlike, slow motion state as I gaped in amazement—aware that what I was witnessing was real but trying to deny in my mind that such a horrible thing was really happening. Slowly, slowly, the twin fireballs began an agonizing trip to earth. Seconds ticked away like hours as I watched and mentally counted off their passage while the fireballs seemingly floated down to the sugar cane fields below. There was no sound throughout their descent, and none accompanied the impact of the two flaming hulks of distorted aluminum that had so recently been graceful flying machines. A sudden billow of dust and smoke rising from the Luzon countryside offered only mute testimony to the termination of their firey, vertical plummet.

Our whole crew stood around the Globemaster in stunned amazement over the unbelievable sight we had all just observed. Complete thoughts or comments were impossible, but the fragments of sentences trailing off unfinished and the deliberate shaking of one person's head and then another's, accompanied by the slow, drawn-out pronouncing of a favorite expletive, said it all. Sensible thoughts and words totally eluded us for some time, and weren't really needed.

Our trance-like state was finally broken by the arrival of a ramp truck with a safety representative looking for flight line witneses to the disaster. Being the only one of us who had seen the actual impact of the two planes and the events just preceding it, the copilot was whisked away to base ops to make a statement. He was gone for better than a half-hour, and in the interim the fuel truck finally arrived and we got on with the activities of preparing for departure. Getting busy helped dissipate the numbness that had descended over the crew, but curiosity and speculation came quickly on its heels. By the time the copilot returned, we were eager to find out what kinds of planes were involved, what they were doing, how many people were aboard, and so forth.

As soon as he had the time, the copilot filled us in on what little preliminary information he had been able to gather while making his statement. The long and the short of it was that one of the planes, a C-47, was in the pattern for an approach. As the Gooney Bird turned onto the downwind leg, a T-39 which was climbing out VFR from a touch-and-go hit it broadside.

Two large fireballs hung nearly motionless in the sky as if they were suspended on invisible wires.

Some time later, I found out that the pilots in both planes had apparently contributed to the mishap. The T-39 crew got a heavier share of the blame for not clearing their flight path while flying VFR, but the Gooney Bird crew was remiss, too, because they hadn't entered downwind at the officially designated spot.

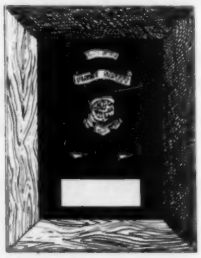
Who was more to blame, however, is not nearly as important as the fact that momentary inattention to duty, or carelessness, by *both* crews resulted in needless death for seven people who were aboard and the destruction of two perfectly flyable airplanes. In one way, perhaps, the crash might be categorized as less than a total loss. It did leave a graphic illustration of the deadly price which failure to "see and avoid" can exact engraved on the mind of a young navigator. I suspect that it made believers out of the rest of that awestruck C-124 crew as well.

1979 MAC Safety

The MAC Trophy for Flying Safety

Presented to the MAC air force or service with the most effective flying safety program as determined by flight mishap rate, severity and causes of mishaps, and mission.

22d Air Force



MAC Distinguished Flying Unit Safety Award

Presented to the best unit from among those receiving the MAC Safety Achievement Award.

375th AAW & 932 AAG (Assoc), Scott AFB

MAC Support Safety Achievement Award

Presented to airlift support units which have an exceptional quality of services and successful mishap prevention programs.

Det 3, 322 ALD, Athens
Det 175, TUSLOG Incirlik CDI
603 MASS, Kadena AB
605 MASS, Andersen AFB
619 MASS, Hickam AFB
625 MASS, Torrejon AB
627 MASS, RAF Mildenhall

MAC Flight Safety Achievement Award

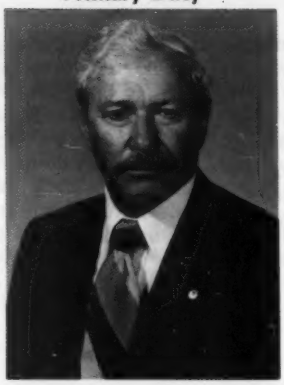
Presented to wings or equivalent units that are accident-free and have effective flight safety programs.

62 MAW & 446 MAW (Assoc), McChord AFB
63 MAW & 445 MAW (Assoc), Norton AFB
76 MAW, Andrews AFB
317 TAW, Pope AFB
375 AAW & 932 AAG (Assoc), Scott AFB
435 TAW, Rhein-Main AB
436 MAW & 512 MAW (Assoc), Dover AFB
443 MAW, Altus AFB
463 TAW, Dyess AFB
616 MAG, Elmendorf AFB
1550 ATTW, Kirtland AFB

Award Winners

MAC Safety Officer of the Year Awards

Primary Duty



Mr. Kenneth L. Groves
1606 ABW, Kirtland AFB

Additional Duty

Capt Stephen P. Camann
54 WRS, Andersen AFB

MAC Safety NCO of the Year Awards

Primary Duty

SSgt William L. Paskiet
314 TAW, Little Rock AFB

Additional Duty

TSgt Daniel L. Gushard
63 FMS, Norton AFB

Flight Lines

The Pleasure Was Ours, Colonel

The MAC Flyer magazines arrived, and you have done a superb job with "Blind Flying's Men of Vision." The article is the best ever and the artwork is beautiful.
Colonel Carl J. Crane,
USAF, Retired
San Antonio, Texas

★The opportunity for us to meet you and relive such an important and interesting period of Air Force history was an honor and a privilege, Colonel Crane. Thanks for your generous compliments and for going out of your way to provide us with a personal interview and most of the rare photographs and background material that went into our two-part article (Jan & Feb *TMF*) on the tremendous contributions you and Colonel William Ocker have made to safe all-weather flight.

Alas, All Boeings Aren't Alike

Is one of the aircraft on page eight of your November 1979 issue supposed to be a Boeing 727?
Lt Col Clifford R. Krieger
Commander, 25 Tactical
Air Support Sq (AAC)
Eielson AFB, Alaska

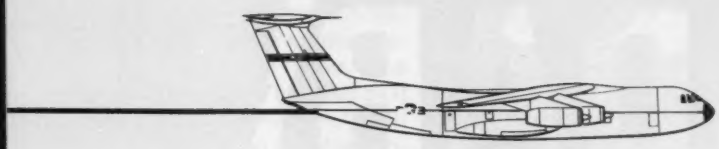
★Yes!

"Your Other Wyoming, Schmidlap"

Reference "After Deadlines" item in December 79 issue of *TMF* entitled, "Hercules Helped Contain Big Fires." Please advise where the Air Reserve Forces C-130 unit in Idaho is located.

Col Joe Daly, Commander
153 TAG, Wyoming ANG

★We appreciate you letting us know, albiet obliquely, that Idaho has no C-130 ARF unit and that your Wyoming C-130 Air Guard Group was a major participant in last fall's fire suppression mission in California. We hereby delete Idaho and insert Wyoming, and add a hearty salute to you and all the people in the 153 TAG for flying one of the most challenging and worthwhile missions around.



Give Credit Where Credit Is Due

I have to take exception to one statement in your "Cleared to Cross" article (November *TMF*). The article correctly pointed out the need for crews to be aware of possible failures in our normally reliable air traffic control system, but your statement that "only a monumental amount of luck prevented this incident from ending in a collision" does not give the 747 crew appropriate credit. What really prevented (a catastrophic) accident was the 747 pilot's decision to steer his aircraft off the runway and through a snow bank. Since aircrew decisions made under stress are frequently the subject of intense Monday-morning quarterbacking, a good decision should receive appropriate credit and not be dismissed as luck.

Maj. Michael R. Gallagher
18 MAS, McGuire AFB, NJ

★For well deserved credit, look at "How To Plan a Crash Landing" in the February *TMF*.

You Can't Please Everybody

Thank you so much for identifying the long-winded pilot from Georgia in your "Let Me Put it This Way" article on page 29 of the January 1980 issue of *TMF*. I've been searching for years for the guy that had a nice long conversation while I was waiting to declare minimum fuel. If you'll give me his squadron, I'll arrange for a no-notice check on radio procedures by one of our "MACzaminers."

Major Robert M. Albers
Flying Safety Officer
443 MAW, Altus AFB, OK

★We're afraid you're out of luck on this one, Bob. As near as we could find out the Silver-Tongued Fox in our article was one of our brethren who flies for the airlines, and they didn't divulge his identity.

More "Herk" Highlights

We at the 1st Special Operations Wing, Hurlburt Field, Florida, read with interest your article on the "Silver Anniversary of the Hercules." MAC has certainly used the C-130 in its multiple mission roles most successfully over the past 25 years.

For the many avid followers of the Hercules' exploits, you should know that the MC-130 "Combat Talon" is a unique adaptation of the basic C-130 airframe. The 8th Special Operations Squadron at Hurlburt and its sister squadron, the 7th SOS in Germany, are the only units in the Air Force still employing the Fulton surface-to-air recovery system. Eighth SOS aircraft are also capable of inflight air refueling. They share this capability with a second sister squadron, the 1st SOS on Okinawa, the gunships of the 1st SOW's 16th Special Operations Squadron, and TAC's ABCCC C-130s. The 16th SOS, by the way, is the only active duty gunship squadron in the Air Force. They proudly fly the AC-130H "Spectre" you cite in your most interesting and informative article.

We in TAC join you in saluting the "Herky Bird" and the men and women who fly and maintain our C-130s—without both we would never get off the ground.

Col R. H. Dunwoody, Commander
1st Special Operations Wing
Hurlburt Field, Florida

We welcome letters from our readers and print all that space and good taste will allow. Send your letters to:

The Editor, *The MAC Flyer*
HQ MAC/IGFE
Scott AFB IL 62225

We'd like to have signed letters; however, we'll withhold the name at the author's request. Letters concerning controversial subjects are acceptable, but please address specific issues rather than personalities. We reserve the right to print letters whole or in part.

RADAR

—A Primer for Pilots and Engineers

by Maj James G. Gibson II
Supervising Editor

As most of us who've had a course in even high school biology are aware, nature equipped bats with the first form of airborne radar so they could navigate around obstacles at night and in the darkness of their caves. What bats accomplish by sending and receiving high-pitched squeaks, man has been able to copy to some extent using a gizmo that sends and receives electronic impulses at 162,000 nautical miles per second, interprets them and displays the results on a cathode ray tube. We know man's system, of course, as radar, which is an acronym for radio detecting and ranging. Discovery of the principles which made it possible took place in the 1920s, but it wasn't until World War II that practical radar systems were put into extensive use by the military.

So much for the biology and history refresher. What's important is the fact that with radar we can—like the bat—squeak through some mighty tight spots "in the blind." But radar is not foolproof, and it is by no means a panacea. Wonderful as this electronic "eye in the sky" is, it's no better than the operator's ability to accurately interpret the video tube presentation of what the antenna "sees." Although radar can be useful for position fixing by taking ranges and bearings from objects located on the ground, inertial navigation systems and sophisticated radio devices such as VORs and tacans have greatly reduced its role as an aid to normal navigation in MAC aircraft. But radar continues to shine, with certain limitations which we shall explore, when the need arises to avoid adverse weather—when all you can see out the window is "soup."

Now that the traditional guru of the gain control knob—namely the navigator — is becoming less and less evident on the flight decks of many of MAC's airplanes, the need is increasing for other crewmembers, such as pilots and engineers, to become more proficient at optimal operation of the radar set. This especially includes accurate interpretation of its sometimes cryptic presentation. Not knowing how to use radar effectively can lead to disastrous results, and the DC-9 crash near New Hope, Georgia, in 1977 is a prime example. According to the National Transportation Safety Board investigation after that fatal mishap, the aircraft was flying in heavy rain and hail while the crew studied their radar scope intently in the hope of finding a "hole" in the storm which would permit them to avoid the beating they were taking. Spotting what they perceived to be an avenue of escape, they turned toward the apparent opening but encountered even worse conditions. In the heavier precip, hail and turbulence, the DC-9 was damaged, the engines flamed out, and the ensuing forced crash landing claimed the lives of 62 people aboard the airliner and nine on the ground.

In their official report, the Board noted an interesting fact. Safety studies have shown that airborne radars operating in the X-band frequency (which includes most currently in use) are susceptible to attenuation or the scattering of returns by water falling near the antenna. Failing to take this into consideration, a pilot may get a misleading display, or misread it, and go for a break in the weather that isn't really there at all—or is the "sucker hole" for an even worse

situation.

Cloud returns, which appear as bright spots on a radar scope, are called precipitation echoes. As a matter of fact, weather detecting impulses from the antenna, which are focused by it into a narrow, pencil-like beam, are designed to be reflected primarily by some form of precipitation. Usually such precip occurs in the form of rain or moist hail. Normally snow and objects like other airplanes are not picked up, although if it is aimed at them, ground or terrain features can be pictured on the scope and "read." Turbulence itself cannot be seen by radar, but some of the cloud or weather phenomena normally associated with it can be an indicator that its presence is likely.

Certain distinctive patterns in returns are indicative of particular weather phenomena. The presence of hail, for example, may be expected around targets which appear to have hooks, fingers or protrusions, scalloped edges or U-shaped pendants. Crescent-shaped indentations also tend to indicate hail or snow areas.

Sharper definition of areas of precip may sometimes be provided through the use of a feature called "iso-echo." This marvel of electronic wizardry alters the normal radar presentation by cancelling out the areas of heaviest rainfall so that they appear as black spots or holes. A Murphyesque danger exists in this mode of operation if the operator forgets he or she is using it and erroneously interprets the dark areas as openings in the storm instead of taking them into account correctly as centers of the most intense activity.

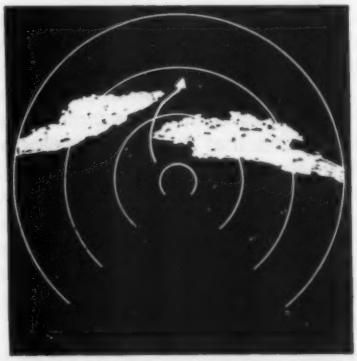
Remembering that what you are seeing portrayed in either normal or iso-echo modes are

Normal cloud returns.

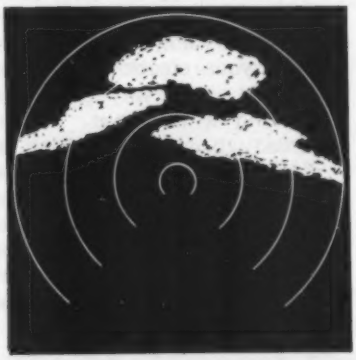
In iso-echo, areas of strongest precip are outlined.

Radar tilted down too far. Both ground and cloud returns are bright.

Radar tilted up. Ground returns fade but cloud returns remain bright.



Apparent escape route through "sucker hole."



This is what could await you behind a "sucker hole." Heavy cloud buildup was blocked by returns closer to the aircraft.

the returns from precipitation; it is important to note that the size of those areas displayed is nowhere near as important as the distance between targets indicating light and heavy precip. One of your primary concerns should be turbulence, and the shorter the distance between varying degrees of rainfall, the more disturbed the air between them is likely to be. You should also be conscious of the fact that your radar scope's precip "map" is not necessarily indicative of updrafts and downdrafts. Even in iso-echo, where outlined black holes confirm the presence of active storm cells, the extent of the turbulent air in the vicinity is not precisely defined. The scope presentation is designed to serve as a means for detouring around storms, not for dodging between them or even venturing within 20 miles of the buildups associated with a frontal system or any other severe weather formation.

If you are foolish enough to try and use a radar to penetrate or navigate through an area of heavy weather; or are unfortunate enough to blunder into such a trap by accident, you're going to discover that once your airplane is engulfed in a storm cell, your electronic eye will probably be of very little use in finding a way out. As has already been pointed out, attenuation due to precip makes the accuracy of any display when you're in hail or heavy precip extremely dubious, and accumulated ice on the radome or damage to it by hailstones can be very effective in producing an even more distorted picture. The best way of using your radar is to take advantage of its long range viewing capability, so you can keep an eye out far ahead (any time you can't see well enough with your naked eyes) to permit giving severe weather a wide berth.

Another common problem with radar scope interpretation is the difficulty of figuring out which returns are weather related and which are ground or terrain features. The secret of being able to make a distinction rests with a control called "tilt." Appropriate tilting of the antenna upward will permit ground targets to fade while weather targets remain bright and distinct.

One final note of caution — airborne radar, no matter how sophisticated, cannot relieve pilots of the responsibility for obtaining an up-to-date weather briefing as part of preflight planning. The primary safety margin provided by airborne radar is the capability to cope with abrupt enroute changes in forecast weather at night, when flying on instruments in the soup where imbedded storm clouds and buildups are not visible to the naked eye, or whenever approaching suspicious cloud formations that may pop up along your route of flight. With a good forecast you have a much better idea of what to expect enroute and a clearer picture of what the options are once you encounter the predicted conditions. You will be in a much better position to decide whether to turn back, request a different altitude or route of flight or simply make a brief detour and press on.

Like any other acquired ability or skill, radar proficiency comes with practice. One good way to practice is tuning up the radar set aboard your aircraft every time you get the opportunity while the weather is good, but there are at least a few clouds out there in the sky. Compare what you see on the scope with what you observe through the windows. Flip on the iso-echo and notice what a difference it makes in the picture. Vary the tilt so that ground returns fade in and out and discover how much tilt gives the best presentation at the altitudes you normally fly. Experiment with the gain control and intensity until you are able to fine-tune the scope easily. Last, but not least, read up on your set in the Dash One. Become familiar with all the eccentricities of the radar in your particular aircraft type—know what it can and cannot do for you when the chips are down. Then you should be able to prevent most of those moments of stark terror you're sure to encounter if you needlessly stumble into the destructive clutches of severe stormy weather.

Technical source material for this article was drawn extensively from AFM 51-40, Air Navigation, *and an article in the September-October issue of* FAA General Aviation News *titled, "Uses and Abuses of Airborne Radar." —Ed.*

Shades of Gray

Modern technology has given us sun glasses that lighten and darken automatically, but they do have some significant disadvantages for aviators.

A pilot wearing "photogray" glasses flew his private airplane toward the setting sun above a cloud layer. Approaching his destination, he started a descent into the undercast and found the light intensity to be much lower than he expected. He had considerable difficulty seeing the instruments as the small plane descended through the murk, but he couldn't take off his glasses because his radio earpiece was attached to them. Eventually he spotted the runway environment and made a safe, but well below standard, landing. After removing his still-tinted photochromic lenses, he discovered the scene wasn't quite as dark as he had supposed.

Air Force pilots who require corrective lenses for flying aren't issued glasses that change tint automatically. But nothing prevents a flyer from purchasing his own antiglare spectacles, and like many personal convenience items they can find their way into the cockpit. These lenses can present a significant hazard if used incorrectly, and here's why.

The automatic change of tint in photochromic lenses is caused by microcrystals of silver halides that are impregnated into the glass. Ultraviolet rays in sunlight darken the crystals but, unlike photochromic film, the process is reversible. Thus, when the light level is reduced, the lenses become colorless again as the silver halides fade.

Automatic tinting has advantages that make photochromic lenses popular. Since the tint varies with ambient light, a person who wears prescription glasses can often save the cost of prescription sunglasses. Unfortunately, antiglare lenses also have serious drawbacks for flying or driving.

To protect the eyes from glare, a tinted lens should transmit no more than 25% of visible light, but a number of photochromic lenses cannot approach this standard. Additionally, the cockpits of many aircraft are well shaded, and this, together with the ultra violet filtration effect of the windscreen, may not allow enough light to reach the lenses to activate the silver halides.

Photochromic lenses do change tint automatically, but not immediately. Under test conditions, some lenses removed from sunlight were only 50% clear after 20 minutes, and even after hours in the dark some never became more than 80% clear.

Your eyes readily adapt to a wide range of light intensities, but below a certain level—approximately moderate indoor illumination—visual acuity falls off steeply with reduced light. Additionally, any transparency placed between your eyes and what you're looking at blocks out a certain amount of the light. When several layers of glass or plastic, such as sunglasses and a tinted windscreen, are placed between the pilot and the exterior of the airplane, his or her visual performance is reduced somewhat in clouds and a lot more at dusk or at night. If you wear photochromic glasses in sunlight you'll find your vision impaired when you fly into clouds; the lenses just can't change quickly enough. At dusk or at night the pilot who wears antiglare lenses thinking they are perfectly clear is also at a disadvantage, even though he or she may not realize it.

Even the newest antiglare lenses that claim a light transmission range from 90% down to 16%, still require 20 minutes or more to fade or darken their maximum amount. Since the transition from bright sunlight to gray murk can be instantaneous when flying, having an extra set of clear lenses readily available is necessary. It appears that the best thing to do with photochromic glasses is treat them like ordinary sunglasses. Keeping that in mind, they should be replaced with clear specs when flying at night or under conditions of reduced illumination.

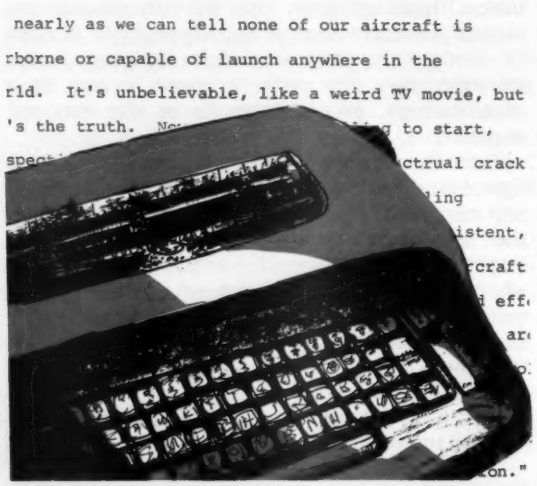
This summer one officer will get the . . .

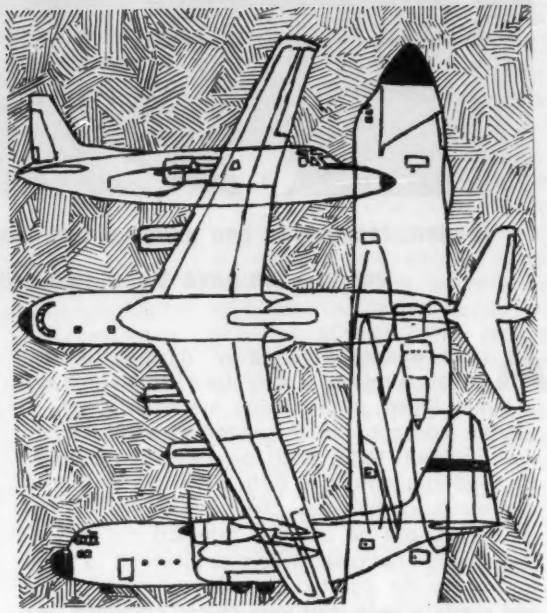
Best Job at MAC

For the officer with initiative, creativity, and reasonable writing ability, being an Associate Editor for *The MAC Flyer* is certainly the best job at MAC Headquarters, and probably one of the finest opportunities available in the Air Force. If you haven't read the table-of-contents page carefully, you may not realize that the magazine is published by the Director of Safety, who works directly for the Inspector General. The IG is a MAC special staff agency with "Deputy-Chief-of-Staff status" — a very unique group of bosses for a magazine editing crew. Our charter is to produce the command's flight safety journal for "greater safety and efficiency in MAC air operations." Although the Associate Editor's job requires hard work and living with regular deadlines, you do have considerable latitude in which to exercise your creative skills. Besides it's often a lot of fun. It's a great job, and we're looking for someone to fill it this summer.

Our hard-and-fast requirements are few. A prospective editor must:

- Be a pilot or navigator who is a captain,
- Have MAC airlift experience,
- Be willing to volunteer for the job and complete an editorial evaluation furnished by the *TMF* staff.
- Be eligible for assignment (we prefer arrival at Scott between June and August 1980).





Although not a prerequisite, some experience in journalism, public affairs, or writing and editing would be a big plus in any applicant's credentials. Backgrounds in safety and tactical airlift are also desirable. What we really want is an officer who has both the fortitude and ability to put a good story on paper, and enough flying experience to make it credible.

To apply you need to do two things—one for us and one for the personnel folks. First, call the *Flyer* (Autovon 638-3534) or drop us a short note letting us know you are interested. Also, let your supervisor and commander know you want to take a crack at the job. Second, tell the personnel system you're a volunteer by filling out an AF Form 90. Specifically, under "immediate assignment objectives, first preference," fill in: DAFSC—X1425 ("J" suffix for strat airlifters or "K" for tac airlifters; or X2235Y for navigators); Base—Scott AFB, IL; Duty Title—Associate Editor, *The MAC Flyer.*

The wheels of the assignment system turn slowly and carefully, so if this unique job opportunity appeals to you, apply now. Our address is:

The MAC Flyer
HQ MAC/IGFE
Scott AFB, IL 62225

C.R. TERROR

The Ace of Aeromed shares his peculiar techniques of weather avoidance with his competent, comely copilot and ends up getting hammered.

Now don't go wrinkling your pretty brow with needless worry, Tassels, m'love," soothed the Lothario of the Airways.

"I'm sorry, C.R.," whimpered his pulchritudinous playmate of many moons, but it really bothers me to think of you out slipping the surly bonds with a beautiful female only a couple of feet across the console from you in the right seat of your C-9."

"You're such a worrywart," he chastened her mildly. "I've told you a hundred times that it's all strictly business up there in the blue. Heck, I've been going TDY with flight nurses on my crews for umpteen years and there's never been any hanky panky."

Tassels remained quiet and pensive as C.R. covered the last couple of miles to the base in her new four-wheel drive Zonko. He was tucking his wallet back into his pocket after producing his ID card for the gate guard when his concerned companion reopened the conversation. "I know I'm silly for being so jealous, but you're such a prize hunk, there's not a woman I know who wouldn't enjoy tweaking your mustache if she got the chance."

Pulling up next to the pile of aircrew bags outside the squadron building so he could offload his own travel gear, the Portly Pilot brushed aside Tassels' flattery with a grin and gesture of mock modesty. He added his hangup bag and B-4 to the heap and returned to the driver's side of the RV where his misty-eyed Ms was already in positionn to give him an osculatory farewell. "Be good now, ya' hear," she warned gently as she let out the clutch and eased away from the curb.

"Well hel-lo Sholley," C.R. greeted the copilot in his best pseudo-Brooklynese accent, "So howgozit?"

"Not so bad, Major," replied

Captain Shirley Wood, looking up from the pile of preflight materials that included a SID, DD Form 175, and airways charts spread out on the flight planning desk. "I've just about got the obligatory paperwork ready for you to check over and sign, sir."

"Excellent, m'dear, excellent," mumbled the Rhinestone Flyboy through a wreath of smoke curling up from the Egyptian Oval in his microtronic-filtered ebony cigarette holder. "This appears outstanding to me," he added as he quickly thumbed through it. "Not only do you *look* better than my regular copilot, your paperwork is much neater. I may have to put in a standing order for a female right-seater *every* time I fly, heh heh."

"I'll accept your praise of my ability as an individual to complete paperwork well, Major," explained the liberated young lady who had suddenly turned serious, "but I fail to see how you can be so patronizing as to generalize my talents in that respect to include *all* female copilots."

Recoiling in feigned contrition, the Chastised Chauvinist exploded with his best facsimilie of Steve Martin's, "Well, Excuuuuse Me! I can see, Captain Wood, that this is going to be a very interesting trip."

The balding voyager paused in mid-photo of the article he was perusing in a well known men's entertainment magazine while he awaited completion of the patient onload and arrival of the space-A pax. Stretching his neck, he tested the air with his nose upthrust like an overweight blue tick hound sniffing out a covey of quail. His distaff copilot slid into the right seat and began adjusting her harness and rudder pedals. "My goodness, my little chickadee," puzzled the Paunchus Pilot between exaggerated sniffs. "Where on earth did you get that bizarre, er, I mean *exotic* perfume?"

"Sir, I am not wearing perfume today," replied his spunky sidekick. "If I'm not mistaken, the scent which seems to have sent you is Eau de Hydraulic Fluid. It got on me accidently during preflight walkaround.

"Ah, so 'tiz, so 'tiz. Course I knew that all the time, m'dear. Just joshing you, no offense meant," apologized the embarrassed Prince of Prevarication.

"No offense taken, sir," replied Captain Wood, "They're about to button things up in the back. Are you ready to begin the Before Starting Engines Checklist?"

"Let's do it—I mean, yes, start the checklist," stammered the Field Grade Fumbler.

Aside from certain routine cockpit chatter that somehow seemed to take on inappropriate second meanings with a female across the console from him, C.R., the Unsinkable, actually began feeling more at ease with his liberated copilot after a couple of legs. By the same token, Captain Wood realized that even though C.R. had some severe chauvinistic tendencies by today's standards, they manifested themselves more in well-meant, gallant gestures than in intentional slights to her femininity, and she actually found herself enjoying the company of an old charmer from another "era."

With his sexist sensitivity awareness level nearly tripled, the Affable Aeronaut even managed to refrain from adding "for a female" to the end of a compliment he proferred to his copilot for her smoothness in handling the checklists and radio calls. Especially since understanding some of the controllers had been difficult due to unusually heavy radio interference.

"You should be upgrading to AC pretty soon," specuated C.R. as they taxied out for takeoff on their final leg of the day. "Feel like you're ready for the responsibility? The pressure? The lonliness of command?" he queried. There was a momentary pause, and then Capt Wood looked her inquisitor straight in the eye and replied, "When the time comes, I believe I'll be able to hack the program."

Once they reached level off and got the band aid express set up for cruise, or as C.R. put it, "on long final for home station," the Old Head's curiosity finally got the best of him. "Tell me if you will, madam copilot, what do you expect will be the hardest thing for you to overcome as a female aircraft commander?

"The same thing that I think is a problem for *any pilot*, male or female," answered the right-seater evenly.

"And what might that be," pursued C.R. like a bloodhound on a hot trail.

"In a nutshell," began the captain, "it's knowing your own abilities and limitations and the cabapilities of your air machine well enough to judge how close you can go to the 'edge' in a given situation and still leave yourself a sensible margin of safety."

"Hmmmmm," mused the Ace of Aeromed, "I always used to think it was keeping the flight nurses and med tech's, not to mention overzealous copilots, in line."

Their philosophical discourse was interrupted by Lieutenant Randy McBruce, one of the flight nurses. "Excuse me sir, but here's your patient info for the arrival message, Major Terror," he said, flashing both the AC and copilot an infectious Cheshire Cat grin. "Looks like

you've got everything under control up here," he added, "so adios for now."

"I don't understand why that guy didn't go ahead and become a doctor," C.R. commented, when the lieutenant was safely out of earshot.

"Do you mean to say that women should be the nurses and men the doctors?" teased Captain Wood with mock seriousness.

"Not at all, not at all," denied the Rotund One defensively, "It's just that — "

"Never mind, Major, I know what you meant," she chuckled as she permitted C.R. to wiggle free from his own fish hook. Grabbing the opportunity to swap subjects, the Master Manipulator suggested that they were far enough along in the flight to call metro for a destination weather update.

"Home station is progged for 300-and-a-mile with isolated thunderstorms, intermitent fog and haze and visibility down to half a mile," Capt Wood reported with a grimace. "Shall I double check our alternates—that forecast sounds kinda iffy to me."

"Hey, no sweat on the forecast my comely copilot. If I took those weather weenies' dire predictions seriously all the time, I'd never get off the ground or land at my original destination most of the time," C.R. blustered. "Remember you're flying with Old Goldenhands here, so don't worry about a thing."

Before long the C-9 was in the soup. Captain Wood watched the weather radar, keeping a lookout for buildups imbedded in the overcast. About 45 minutes from home station, she spied two large cells, one on either side of track.

"We'd better take a detour around the right of these buildups," offered the cautious copilot.

"Heck, those beauties are 15 or 20 miles apart," noted C.R. "Why waste time going out of our way when we've got an electronic cyclops to guide us safely between 'em?"

"You're the boss, but I still think we ought to make a detour," put in the Captain even though she knew her protest was falling on deaf ears.

Without warning there was a tremendous flash and a deafening crack as lightning slammed the C-9 with the impact of a ball peen hammer coming down on a walnut. Passing between the storm cells, the Nightengale

was buffeted all over the sky in the violent updrafts and downdrafts generated by the rapidly mushrooming twin cumulus clouds. Then, as quickly as it had begun, the turbulence tapered off.

"How's everything in the back?" inquired the copilot over intercom.

"We got tossed around pretty bad," came the irritated reply of the head nurse. One patient's I.V. bottle got loose and pulled out the needle, but Lieutenant McBruce is taking care of that problem now. Otherwise, I think we're okay. What happened, anyway?"

"Ahem, just a 'little' thunder bumper that reached out and tried to grab us," the Well-Pounded Penetrator pronounced before his copilot could let the cat out of the bag.

"I'd sure hate to get near a *big* one," was the sarcastic rejoinder from the rear. Descent and clearance for an approach were routine except for the soupy weather which seemed to get thicker the lower they went. At about 500 feet the copilot asked C.R. anxiously, "Are you sure you don't want to go on to our alternate? We've already had one close shave."

"That's why we get flight pay, my reluctant rough rider. Hang on while the Old Pro shows you how to outfox the forecasters."

At 300 feet they were still encased in IMC, and as they neared 200 with nothing but suspended moisture in sight Captain Wood started to call "Go around." Before she could speak, they broke out and with a slight jog to the right to get on centerline, C.R. plunked the C-9 gently, but firmly, onto the runway.

Once they were at their parking spot and blocked in, the Overconfident Oaf couldn't resist chiding the copilot, "Now do you see what I mean about the weather, Ms. Wood? You don't ever have to worry about a go-round when Old Goldenhands is at the controls."

"Maybe not Major, but I think you may have another kind of weather related worry by the look on the crew chief's face," replied the observant right-seater.

"Pardon me sir," panted the excited mechanic as he entered the cockpit, "but you'd better come outside and take a gander at your radome. It looks like a walnut that was hit with a ball peen hammer."

Capt Wood didn't say a word. She just gave C.R. an exaggerated shrug and smiled demurely.

QUICK S

Nose Job

When the copilot placed the Starlifter's brake selector switch to "normal" as part of the before taxi check, normal brake pressure remained at zero. This same problem had occurred on the previous leg, but maintenance could find nothing wrong and signed it off, "Ops checked good, IAW . . . ."

The copilot returned the switch to emergency and the flight engineer went down to check the NLG selector valve. While troubleshooting the system he inadvertently actuated the manual override retract button. With normal electric and hydraulic power directing a gear down condition, pushing this retract button isn't supposed to retract anything. But in this case it did and the C-141 settled on its nose to the teeth-rattling astonishment of the crew.

Investigators found that the nose landing gear selector valve, which is supposed to prevent the manual retract button from retracting the gear did not operate properly. There was apparently enough leakage in the internal pilot valve of the selector to allow the gear-retract lines to become pressurized by manual activation of the button.

TOPPERS

Bird Nest Makes for Duck Soup

A west coast aero club pilot and his daughter on a cross-country flight parked their trusty Cessna 172 at a small air patch in Oklahoma for an enroute layover. Three days later they decided to fly around the local area to look over some farms and take pictures. Cruising along low over the terrain at approximately normal power everything was hunky-dorry, but when they decided to accelerate and climb a bit, the Cessna's engine began running erratically. Suspecting carburetor icing, the pilot selected carb heat, but things only seemed to get worse. It soon became obvious they were going to have to get the plane on the ground, so the pilot made a no-flap landing in a convenient open field. Unfortunately, as soon as he applied the binders, the airplane pitched forward on its nose strut and then turned turtle in the soft dirt. Neither occupant of the 172 was injured, but the plane sustained major damage. Eventually it was shipped back to its home base aero club where the engine was torn down to find out why it wouldn't run right. Pieces of straw and cloth—the remains of a bird's nest—were discovered hidden inside the intake manifold where even the most careful preflight wouldn't have revealed them. Investigators theorized that application of the carb heat provided a chance for the nest, which some bird started to build while the plane was parked unattended for three days, to be ingested, causing the engine to fail. Lesson: A bird nest in the intake manifold can be worth about $8,500 worth of repairs to a Cessna 172.

Black Box Blues

Unwanted flight control inputs in C-141s have reached near epidemic proportions in recent months. Sometimes they are merely annoying; sometimes downright scarey. Here's a sampling:

- Aircraft on local approach started rocking. Full right aileron and nearly full rudder were needed to maintain wings level on go around. Before an uneventful no-flap approach and landing were accomplished, another episode of rocking occurred and 45-degree right wheel throw and full right rudder were required to keep things on an even keel.
- As descent from 10,000 feet was started, an abrupt 20-degree left yaw accompanied by a slight pitch-up occurred. Autopilot was disconnected and aircraft stabilized almost immediately.
- At 3,000 feet and 200 knots, uncommanded aileron inputs set in and required 50 to 75 percent left wheel throw to keep the wings level.
- At FL 390, pilots noted yaw inputs to the right. Five minutes later, the aircraft went into a violent dutch roll. Descent to FL 310 was made using autopilot turn controller to keep wings level. After three inputs and 500 feet of additional descent, complete control of aircraft was regained and flight continued at FL 310.
- Following a normal auto/auto AWLS approach and touchdown, the rotation go around button was used to disconnect the autopilot and autothrottle and power was advanced to 92 percent for acceleration to rotate speed. After liftoff, the throttles retarded to idle on their own, the aircraft touched back down, and the takeoff was safely aborted.

Obviously the electronic gremlins were having a field day, but in every case, alert, heads-up aircrews were able to come out on top in unscheduled bouts with the black boxes. Keeping a keen edge on all five senses—and also that sixth sense called intuition—is the order of the day if you don't want to get caught with your flaps down.

Flare Fiasco

Even though the approaching airplane was still quite a way out on final, it appeared to the Navy "wheels watcher" that its landing gear was not lowered. Being the conscientious sort, he decided to get ready in case he had to signal the aircraft to go around, using his trusty flare pistol. Quickly inserting a fat cartridge into the breech-loading gun, the watcher resumed his intense observation of the arriving aircraft. He breathed a sigh of relief as the landing gear finally came into view. Still looking at the airplane as it landed safely, he reached back to place the loaded pistol on the table behind him. Unfortunately the signal gun fell off the edge of the table and discharged its flare as it struck the floor. The surprised swabby couldn't get out of the shack fast enough and received some nasty burns on his right leg from the ricocheting rocket.

—Adapted from USN *Weekly Summary*

Amplifying the Problem

During a descent from FL 370 to 16,000 feet, while in a left turn, the pilots of a Sabreliner noticed that both compass cards were on the fritz and the copilot's attitude indicator had frozen at ten-degrees left bank. Neither compass indicator was following the CT-39's changing heading. The crew tried switching to the fast-slave mode, checked the electrical system, and examined the circuit breakers with no results. Advising the center of their problems, they received gyro-out vectors to an uneventful landing. Investigators found the culprit was a compass amplifier so heavily corroded that it failed. The rate switching gyro had also conked out, causing the copilot's MM-3 to freeze.

Careful Watching

"Looks close, but we've got a wingwalker on that side, so let's taxi." That's probably a familiar phrase heard in MAC cockpits every day. But sometimes just having somebody out there to monitor the wingtip clearance isn't enough.

At an overseas base, a Starlifter was forced to use an abnormal parking spot because of another aircraft near the usual MAC ramp space. Enroute maintenance folks carefully directed the C-141 toward the right side of a taxiway, setting it up for a grandiose swing to the left. Two truck-mounted passenger stairs were parked near the right side of the pavement, awaiting a commercial flight that was due in later that day. Realizing the tall trucks might be a hazard, the maintainers wisely positioned an extra marshaller near them.

As the Starlifter captain began a sweeping left turn, the wingwalker on the right realized that the right wingtip would probably hit the steps and immediately gave the stop signal. By the time the marshaller in front of the 141 saw his partner's signal and relayed it to the AC, the pilot didn't have a chance to apply the brakes before the Starlifter's wingtip dinged the steps. Unfortunately, the crewmember with the best chance to prevent the accident, the right-seater, didn't see the wingwalker's signal, because he wasn't watching closely.

AFTER DEADLINES

THE STARS AND STRIPES SHOULD SOON APPEAR on MAC aircrew uniforms. General Huyser, CINCMAC, recently directed the wear of an American flag on the left sleeve, just below the shoulder seam, of all flight suits and flight jackets. Authorization to show the colors is effective immediately, and wear will be required after 1 July 1980. Flags should be about two-by-three inches with a gold border. (MNS)

MAC AIRLIFT SUPPORT OF BRITISH PEACEKEEPERS in Zimbabwe-Rhodesia has garnered stellar praise from Air Force officials. During December 1979, two Galaxys and 10 Starlifters carried more than 443 tons of cargo from RAF Brize-Norton, U.K., to Salisbury, Rhodesia. Lt Gen Pustay, assistant to the Chairman of the Joint Chiefs of Staff, commented, "The successful, on-time completion of airlift operations in support of the United Kingdom's cease-fire monitoring force reflects the highest credit on the aircrews and support personnel associated with this important mission." (MNS)

NOMEX FLYING JACKETS should be issued to crewmembers as soon as they become available according to the AF Inspection and Safety Center and Warner Robins ALC. In their words, "Commands should initiate the proper funding actions--crewmember safety is the first priority."

89 MAG IS LOOKING FOR ENGINEERS for its C-135 and C-137 fleet. The 89th provides world-wide airlift for U.S. and foreign VIPs, including the operation of Air Force One. Interested flight engineers serving in AFSC 113XOC are preferred. A background in 431XX or 426XX specialties is desirable. For more information contact your CBPO, or SMSgt Dean at Autovon 858-5835. (AFNS)

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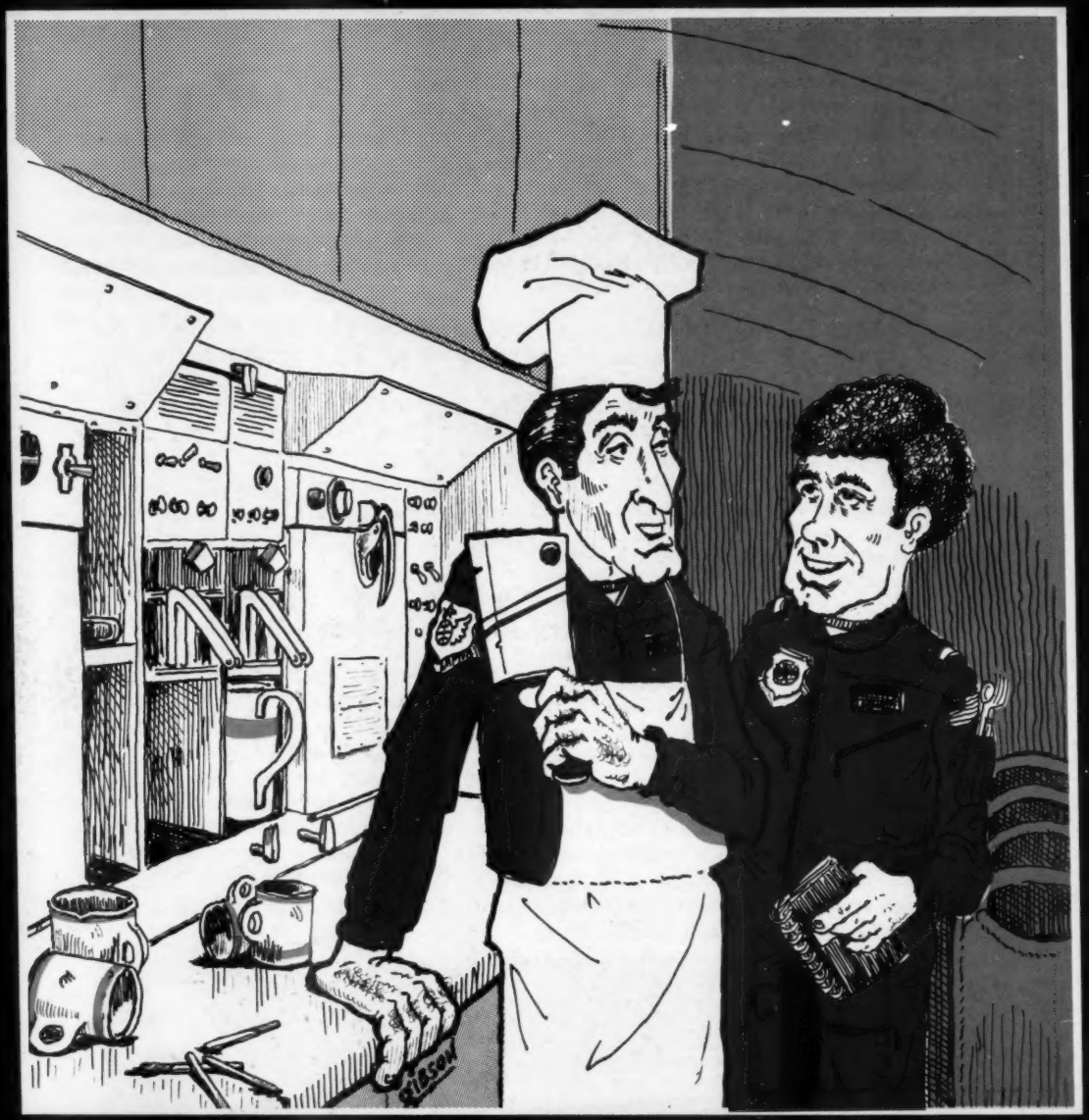

Laugh if you want, Lieutenant...I get very few complaints from the pax about the inflight meals.